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1. 安装部署(Cluster)

1.1. 基础软件安装(必装项请自行安装)

- PostgreSQL (8.2.15+) or MySQL (5.7系列)： 两者任选其一即可
- JDK (1.8+)：必装，请安装好后在 /etc/profile 下配置 JAVA_HOME 及 PATH 变量
- ZooKeeper (3.4.6+)： 必装
- Hadoop (2.6+) or MinIO： 选装，如果需要用到资源上传功能，可以选择上传到 Hadoop or MinIO 上

注意：DolphinScheduler 本身不依赖 Hadoop、Hive、Spark，仅是会调用他们的 Client，用于对应任务的提交。

1.2. 下载二进制 tar.gz 包

请下载最新版本的后端安装包至服务器部署目录，比如创建 /opt/dolphinscheduler 做为安装部署目录，下载地址：下载，下载后上传 tar 包到该目录中，并进行解压。

创建部署目录，部署目录请不要创建在 /root、/home 等高权限目录

```
mkdir -p /opt/apps/
cd /opt/apps/
```

解压缩

```
cd /opt/apps/
tar -zxvf apache-dolphinscheduler-incubating-1.3.4-dolphinscheduler-bin.tar.gz
```

名字太长，改一下：

```
cd /opt/apps/
mv apache-dolphinscheduler-incubating-1.3.4-dolphinscheduler-bin
dolphinscheduler-1.3.4
```

1.3. 创建部署用户和hosts映射

我这儿就使用 bigdata 用户了，以前其他的比如 Hadoop，Hive，Hbase，Kafka，Spark等我都使用 bigdata 用户安装的。配置所有节点之间的 SSH 免密登录。

1.4. 数据库初始化

进入数据库，默认数据库是PostgreSQL，如选择 MySQL 的话，后续需要添加 mysql-connector-java 驱动包到 DolphinScheduler 的 lib 目录下，这里以 MySQL为例：

```
mysql -hbigdata02 -P3306 -uroot -p
```

进入数据库命令行窗口后，执行数据库初始化命令，设置访问账号和密码。

```
drop database if exists dolphinscheduler;
CREATE DATABASE dolphinscheduler DEFAULT CHARACTER SET utf8 DEFAULT COLLATE
utf8_general_ci;
create user 'ds' IDENTIFIED BY 'QWer_1234';
GRANT ALL PRIVILEGES ON dolphinscheduler.* TO 'ds'@'%' IDENTIFIED BY
'QWer_1234';
GRANT ALL PRIVILEGES ON dolphinscheduler.* TO 'ds'@'localhost' IDENTIFIED BY
'QWer_1234';
flush privileges;
```

1.5. 准备MySQL元数据库

修改 conf 目录下 datasource.properties 中的下列配置

```
cd /opt/apps/dolphinscheduler-1.3.4
vim conf/datasource.properties
```

如果选择 MySQL，请注释掉 PostgreSQL 相关配置(反之同理)，还需要手动添加 mysql-connector-java 驱动 jar 包到 lib 目录下，这里下载的是 mysql-connector-java-5.1.47.jar，然后正确配置数据库连接相关信息

```
# postgresql
#spring.datasource.driver-class-name=org.postgresql.Driver
#spring.datasource.url=jdbc:postgresql://localhost:5432/dolphinscheduler
#spring.datasource.username=test
#spring.datasource.password=test

# MySQL
spring.datasource.driver-class-name=com.mysql.jdbc.Driver
spring.datasource.url=jdbc:mysql://bigdata02:3306/dolphinscheduler?
useUnicode=true&characterEncoding=UTF-8&allowMultiQueries=true
spring.datasource.username=ds
spring.datasource.password=QWer_1234
```

1.6. 放入 MySQL 驱动 jar 到 lib 目录

```
cp ~/soft/mysql-connector-java-5.1.47.jar /opt/apps/dolphinscheduler-1.3.4/lib/
```

1.7. 初始化数据库

```
sh script/create-dolphinscheduler.sh
```

```
13:16:10.004 [main] INFO org.apache.dolphinscheduler.common.utils.ScriptRunner - sql: UPDATE t_ds_schedules schedule SET `worker_group`=IFNULL((SE
LECT name from t_ds_worker_group WHERE schedule.worker_group=CONCAT(id,'')),'default')
13:16:10.005 [main] INFO org.apache.dolphinscheduler.common.utils.ScriptRunner - sql: UPDATE t_ds_command command SET `worker_group`=IFNULL((SELEC
T name from t_ds_worker_group WHERE command.worker_group=CONCAT(id,'')),'default')
13:16:10.005 [main] INFO org.apache.dolphinscheduler.common.utils.ScriptRunner - sql: UPDATE t_ds_error_command command SET `worker_group`=IFNULL(
(SELECT name from t_ds_worker_group WHERE command.worker_group=CONCAT(id,'')),'default')
13:16:10.006 [main] INFO org.apache.dolphinscheduler.common.utils.ScriptRunner - sql: UPDATE t_ds_user SET phone = '' WHERE phone = 'xx'
13:16:10.016 [main] DEBUG com.alibaba.druid.pool.PreparedStatementPool - stmt enter cache
13:16:10.018 [main] DEBUG com.alibaba.druid.pool.PreparedStatementPool - stmt enter cache
13:16:10.018 [main] INFO org.apache.dolphinscheduler.dao.upgrade.DolphinSchedulerManager - upgrade DolphinScheduler metadata version from 1.3.0 to
 1.3.2
13:16:10.018 [main] INFO org.apache.dolphinscheduler.dao.upgrade.DolphinSchedulerManager - Begin upgrading DolphinScheduler's table structure
13:16:10.018 [main] INFO org.apache.dolphinscheduler.dao.upgrade.UpgradeDao - dolphinscheduler
13:16:10.019 [main] INFO org.apache.dolphinscheduler.dao.upgrade.UpgradeDao - sqlSQLFilePath/home/bigdata/apps/dolphinscheduler-1.3.2/sql/upgrade/
1.3.2_schema/mysql/dolphinscheduler_dml.sql
13:16:10.019 [main] INFO org.apache.dolphinscheduler.common.utils.ScriptRunner - sql: /*  * Licensed to the Apache Software Foundation (ASF) under
 one or more  * contributor license agreements.  See the NOTICE file distributed with  * this work for additional information regarding copyright
ownership.  * The ASF licenses this file to You under the Apache License, Version 2.0  * (the "License"); you may not use this file except in comp
liance with  * the License.  You may obtain a copy of the License at  *  *    http://www.apache.org/licenses/LICENSE-2.0  *  * Unless required by
applicable law or agreed to in writing, software  * distributed under the License is distributed on an "AS IS" BASIS,  * WITHOUT WARRANTIES OR CON
DITIONS OF ANY KIND, either express or implied.  * See the License for the specific language governing permissions and  * limitations under the Li
cense. */ SET sql_mode=(SELECT REPLACE(@@sql_mode,'ONLY_FULL_GROUP_BY',''))
13:16:10.019 [main] INFO org.apache.dolphinscheduler.common.utils.ScriptRunner - sql: SET FOREIGN_KEY_CHECKS=0
13:16:10.020 [main] INFO org.apache.dolphinscheduler.common.utils.ScriptRunner - sql: UPDATE t_ds_user SET phone = '' WHERE phone = 'xx'
13:16:10.024 [main] DEBUG com.alibaba.druid.pool.PreparedStatementPool - stmt enter cache
13:16:10.042 [main] INFO org.apache.dolphinscheduler.dao.upgrade.shell.CreateDolphinScheduler - upgrade DolphinScheduler finished
13:16:10.042 [main] INFO org.apache.dolphinscheduler.dao.upgrade.shell.CreateDolphinScheduler - create DolphinScheduler success
[bigdata@bigdata05 dolphinscheduler-1.3.2]$
```

1.8. 修改 dolphinscheduler_env.sh

修改：conf/dev/dolphinscheduler_env.sh

```
cd /opt/apps/dolphinscheduler-1.3.4
vim conf/env/dolphinscheduler_env.sh
```

修改一些配置：

```
export HADOOP_HOME=/home/bigdata/apps/hadoop-2.7.7
export HADOOP_CONF_DIR=/home/bigdata/apps/hadoop-2.7.7/etc/hadoop
export SPARK_HOME1=/home/bigdata/apps/spark-2.4.6-bin-hadoop2.7
export SPARK_HOME2=/home/bigdata/apps/spark-2.4.6-bin-hadoop2.7
export PYTHON_HOME=/usr/bin
export JAVA_HOME=/usr/local/java/jdk1.8.0_181
export HIVE_HOME=/home/bigdata/apps/apache-hive-3.1.2-bin
export FLINK_HOME=/home/bigdata/apps/flink-1.11.1
export DATAX_HOME=/home/bigdata/apps/datax/bin/datax.py
```

1.9. 创建Java软连接

将 jdk 软链到 /usr/bin/java 下(仍以 JAVA_HOME=/opt/soft/java 为例)

```
sudo ln -s /usr/local/java/jdk1.8.0_181/bin/java /usr/bin/java
```

1.10. 修改配置 install_config.conf

```
cd /opt/apps/dolphinscheduler-1.3.4
vim conf/config/install_config.conf
```

根据需要修改以下的配置：这里面的每项配置都有对应的说明，所以根据自己的需求，自行修改。

```
# Licensed to the Apache Software Foundation (ASF) under one or more
# contributor license agreements.  See the NOTICE file distributed with
# this work for additional information regarding copyright ownership.
# The ASF licenses this file to You under the Apache License, Version 2.0
# (the "License"); you may not use this file except in compliance with
# the License.  You may obtain a copy of the License at
#
#     http://www.apache.org/licenses/LICENSE-2.0
#
# Unless required by applicable law or agreed to in writing, software
# distributed under the License is distributed on an "AS IS" BASIS,
# WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.
# See the License for the specific language governing permissions and
# limitations under the License.


# NOTICE :  If the following config has special characters in the variable `.*
[]^${}\+?|()@#&`, Please escape, for example, `[` escape to `\[`
# postgresql or mysql
dbtype="mysql"

# db config
# db address and port
dbhost="bigdata02:3306"

# db username
username="ds"
```

```
# database name
dbname="dolphinscheduler"

# db passwprd
# NOTICE: if there are special characters, please use the \ to escape, for
example, `[` escape to `\[`
password="QWer_1234"

# zk cluster
zkQuorum="bigdata04:2181,bigdata03:2181,bigdata02:2181"

# Note: the target installation path for dolphinscheduler, please not config as
the same as the current path (pwd)
installPath="/opt/apps/dolphinscheduler"

# deployment user
# Note: the deployment user needs to have sudo privileges and permissions to
operate hdfs. If hdfs is enabled, the root directory needs to be created by
itself
deployUser="bigdata"


# alert config
# mail server host
mailServerHost="smtp.exmail.qq.com"

# mail server port
# note: Different protocols and encryption methods correspond to different
ports, when SSL/TLS is enabled, make sure the port is correct.
mailServerPort="25"

# sender
mailSender="xxx@qq.com"

# user
mailUser="aaa@qq.com"

# sender password
# note: The mail.passwd is email service authorization code, not the email login
password.
mailPassword="xxxxxxxxxx"

# TLS mail protocol support
starttlsEnable="true"

# SSL mail protocol support
# only one of TLS and SSL can be in the true state.
sslEnable="false"

#note: sslTrust is the same as mailServerHost
sslTrust="smtp.exmail.qq.com"


# resource storage type: HDFS,S3,NONE
resourceStorageType="HDFS"
```

```
# if resourceStorageType is HDFS, defaultFS write namenode address, HA you need to put core-site.xml and hdfs-site.xml in the conf directory.
# if S3, write S3 address, HA, for example : s3a://dolphinscheduler,
# Note, s3 be sure to create the root directory /dolphinscheduler
defaultFS="hdfs://hadoop277ha:8020/"

# if resourceStorageType is S3, the following three configuration is required, otherwise please ignore
s3Endpoint="http://192.168.xx.xx:9010"
s3AccessKey="xxxxxxxxxx"
s3SecretKey="xxxxxxxxxx"

# if resourcemanager HA enable, please type the HA ips ; if resourcemanager is single, make this value empty
yarnHaIps="bigdata04,bigdata05"

# if resourcemanager HA enable or not use resourcemanager, please skip this value setting; If resourcemanager is single, you only need to replace yarnIp1 to actual resourcemanager hostname.
singleYarnIp="yarnIp1"

# resource store on HDFS/S3 path, resource file will store to this hadoop hdfs path, self configuration, please make sure the directory exists on hdfs and have read write permissions。/dolphinscheduler is recommended
resourceUploadPath="/dolphinscheduler"

# who have permissions to create directory under HDFS/S3 root path
# Note: if kerberos is enabled, please config hdfsRootUser=
hdfsRootUser="bigdata"

# kerberos config
# whether kerberos starts, if kerberos starts, following four items need to config, otherwise please ignore
kerberosStartUp="false"
# kdc krb5 config file path
krb5ConfPath="$installPath/conf/krb5.conf"
# keytab username
keytabUserName="hdfs-mycluster@ESZ.COM"
# username keytab path
keytabPath="$installPath/conf/hdfs.headless.keytab"

# api server port
apiServerPort="12345"

# install hosts
# Note: install the scheduled hostname list. If it is pseudo-distributed, just write a pseudo-distributed hostname
ips="localhost"

# ssh port, default 22
# Note: if ssh port is not default, modify here
sshPort="22"

# run master machine
# Note: list of hosts hostname for deploying master
masters="localhost"

# run worker machine
```

```
# note: need to write the worker group name of each worker, the default value is
"default"
workers="localhost:default"

# run alert machine
# note: list of machine hostnames for deploying alert server
alertServer="localhost"

# run api machine
# note: list of machine hostnames for deploying api server
apiServers="localhost"
```

精简版:

```
dbtype="mysql"
dbhost="bigdata02:3306"
username="ds"
dbname="dolphinscheduler"
password="QWer_1234"
zkQuorum="bigdata04:2181,bigdata03:2181,bigdata02:2181"
installPath="/opt/apps/dolphinscheduler"
deployUser="bigdata"
mailServerHost="smtp.exmail.qq.com"
mailServerPort="25"
mailSender="xxx@qq.com"
mailUser="aaa@qq.com"
mailPassword="xxxxxxxxxx"
starttlsEnable="true"
sslEnable="false"
sslTrust="smtp.exmail.qq.com"
resourceStorageType="HDFS"
defaultFS="hdfs://hadoop277ha:8020/"
s3Endpoint="http://192.168.xx.xx:9010"
s3AccessKey="xxxxxxxxxx"
s3SecretKey="xxxxxxxxxx"
yarnHaIps="bigdata04,bigdata05"
singleYarnIp="yarnIp1"
resourceUploadPath="/dolphinscheduler"
hdfsRootUser="bigdata"
kerberosStartUp="false"
krb5ConfPath="$installPath/conf/krb5.conf"
keytabUserName="hdfs-mycluster@ESZ.COM"
keytabPath="$installPath/conf/hdfs.headless.keytab"
apiServerPort="12345"
ips="bigdata05"
sshPort="22"
masters="bigdata05"
workers="bigdata05:default"
alertServer="bigdata05"
apiServers="bigdata05"
```

如果是安装集群则这么写:

```
# install hosts
# Note: install the scheduled hostname list. If it is pseudo-distributed, just
write a pseudo-distributed hostname
```

```
ips="bigdata02,bigdata03,bigdata04,bigdata05"

# ssh port, default 22
# Note: if ssh port is not default, modify here
sshPort="22"

# run master machine
# Note: list of hosts hostname for deploying master
masters="bigdata04,bigdata05"

# run worker machine
# note: need to write the worker group name of each worker, the default value is
"default"
workers="bigdata02:default,bigdata03:default,bigdata04:default,bigdata05:default
"

# run alert machine
# note: list of machine hostnames for deploying alert server
alertServer="bigdata03"

# run api machine
# note: list of machine hostnames for deploying api server
apiServers="bigdata04"
```

配置文件挺难改的，可以考虑备份一下！

1.11. 拷贝 Hadoop 集群配置文件

```
cp ~/apps/hadoop-2.7.7/etc/hadoop/core-site.xml /opt/apps/dolphinscheduler-
1.3.4/conf/
cp ~/apps/hadoop-2.7.7/etc/hadoop/hdfs-site.xml /opt/apps/dolphinscheduler-
1.3.4/conf/
```

1.12. 启动基础服务

启动 ZooKeeper

```
zkServer.sh start
```

启动 Hadoop

```
start-dfs.sh
start-yarn.sh
```

1.13. 一键部署

```
cd /opt/apps/dolphinscheduler-1.3.4/
sh install.sh
```

```
olphinscheduler-server-worker.WorkerServer > /opt/apps/dolphinscheduler/bin/../logs/dolphinscheduler-worker-server-bigdata05.out 2>&1 &
End start worker-server.
Begin start logger-server......
starting logger-server, logging to /opt/apps/dolphinscheduler/bin/../logs/dolphinscheduler-logger-server-bigdata05.out
nohup /usr/local/java/jdk1.8.0_181/bin/java  -server -Xms1g -Xmx1g -Xmn500m -XX:MetaspaceSize=128m -XX:MaxMetaspaceSize=128m  -Xss512k -XX:+UsePar
NewGC -XX:+UseConcMarkSweepGC -XX:+CMSParallelRemarkEnabled -XX:LargePageSizeInBytes=128m -XX:+UseCMSInitiatingOccupancyOnly -XX:CMSInitiatingOccu
pancyFraction=70 -XX:+PrintGCDetails -Xloggc:gc.log -XX:+HeapDumpOnOutOfMemoryError  -XX:HeapDumpPath=dump.hprof -classpath /opt/apps/dolphinsched
uler/bin/../conf:/opt/apps/dolphinscheduler/bin/../lib/* org.apache.dolphinscheduler.server.log.LoggerServer > /opt/apps/dolphinscheduler/bin/../l
ogs/dolphinscheduler-logger-server-bigdata05.out 2>&1 &
End start logger-server.
Begin start alert-server......
starting alert-server, logging to /opt/apps/dolphinscheduler/bin/../logs/dolphinscheduler-alert-server-bigdata05.out
nohup /usr/local/java/jdk1.8.0_181/bin/java -Dlogback.configurationFile=conf/logback-alert.xml -server -Xms1g -Xmx1g -Xmn500m -XX:MetaspaceSize=12
8m -XX:MaxMetaspaceSize=128m  -Xss512k -XX:+UseParNewGC -XX:+UseConcMarkSweepGC -XX:+CMSParallelRemarkEnabled -XX:LargePageSizeInBytes=128m -XX:+U
seCMSInitiatingOccupancyOnly -XX:CMSInitiatingOccupancyFraction=70 -XX:+PrintGCDetails -Xloggc:gc.log -XX:+HeapDumpOnOutOfMemoryError  -XX:HeapDum
pPath=dump.hprof -classpath /opt/apps/dolphinscheduler/bin/../conf:/opt/apps/dolphinscheduler/bin/../lib/* org.apache.dolphinscheduler.alert.Alert
Server > /opt/apps/dolphinscheduler/bin/../logs/dolphinscheduler-alert-server-bigdata05.out 2>&1 &
End start alert-server.
bigdata05 worker server is starting
Begin start api-server......
starting api-server, logging to /opt/apps/dolphinscheduler/bin/../logs/dolphinscheduler-api-server-bigdata05.out
nohup /usr/local/java/jdk1.8.0_181/bin/java -Dlogging.config=classpath:logback-api.xml -Dspring.profiles.active=api -server -Xms1g -Xmx1g -Xmn500m
 -XX:MetaspaceSize=128m -XX:MaxMetaspaceSize=128m  -Xss512k -XX:+UseParNewGC -XX:+UseConcMarkSweepGC -XX:+CMSParallelRemarkEnabled -XX:LargePageSi
zeInBytes=128m -XX:+UseCMSInitiatingOccupancyOnly -XX:CMSInitiatingOccupancyFraction=70 -XX:+PrintGCDetails -Xloggc:gc.log -XX:+HeapDumpOnOutOfMem
oryError  -XX:HeapDumpPath=dump.hprof -classpath /opt/apps/dolphinscheduler/bin/../conf:/opt/apps/dolphinscheduler/bin/../lib/* org.apache.dolphin
scheduler.api.ApiApplicationServer > /opt/apps/dolphinscheduler/bin/../logs/dolphinscheduler-api-server-bigdata05.out 2>&1 &
End start api-server.
[bigdata@bigdata05 dolphinscheduler-1.3.4]$
```

1.14. 检测

脚本完成后，会启动以下5个服务，使用 `jps` 命令查看服务是否启动

```
MasterServer             ----- master服务
WorkerServer             ----- worker服务
LoggerServer             ----- logger服务
ApiApplicationServer     ----- api服务
AlertServer              ----- alert服务
```

```
[bigdata@bigdata05 dolphinscheduler-1.3.2]$ jps
10688 WorkerServer
10736 LoggerServer
10786 AlertServer
10835 ApiApplicationServer
4378 ResourceManager
3371 QuorumPeerMain
11005 Jps
4127 DataNode
4239 NodeManager
10639 MasterServer
[bigdata@bigdata05 dolphinscheduler-1.3.2]$
```

1.15. 日志

如果以上服务都正常启动，说明自动部署成功

部署成功后，可以进行日志查看，日志统一存放于 logs 文件夹内

```
logs/
    ├── dolphinscheduler-alert-server.log
    ├── dolphinscheduler-master-server.log
    |-- dolphinscheduler-worker-server.log
    |-- dolphinscheduler-api-server.log
    |-- dolphinscheduler-logger-server.log
```

2. 登录

访问前端页面地址，接口ip(自行修改)：http://bigdata05:12345/dolphinscheduler

使用 dolphinscheduler 的默认用户密码登录：admin/dolphinscheduler123

3. 启停服务

一键停止集群所有服务

```
sh /opt/apps/dolphinscheduler-1.3.4/bin/stop-all.sh
```

一键开启集群所有服务

```
sh /opt/apps/dolphinscheduler-1.3.4/bin/start-all.sh
```

启停Master

```
sh /opt/apps/dolphinscheduler-1.3.4/bin/dolphinscheduler-daemon.sh start master-server
sh /opt/apps/dolphinscheduler-1.3.4/bin/dolphinscheduler-daemon.sh stop master-server
```

启停Worker

```
sh /opt/apps/dolphinscheduler-1.3.4/bin/dolphinscheduler-daemon.sh start worker-server
sh /opt/apps/dolphinscheduler-1.3.4/bin/dolphinscheduler-daemon.sh stop worker-server
```

启停Api

```
sh /opt/apps/dolphinscheduler-1.3.4/bin/dolphinscheduler-daemon.sh start api-server
sh /opt/apps/dolphinscheduler-1.3.4/bin/dolphinscheduler-daemon.sh stop api-server
```

启停Logger

```
sh /opt/apps/dolphinscheduler-1.3.4/bin/dolphinscheduler-daemon.sh start logger-server
sh /opt/apps/dolphinscheduler-1.3.4/bin/dolphinscheduler-daemon.sh stop logger-server
```

启停Alert

```
sh /opt/apps/dolphinscheduler-1.3.4/dolphinscheduler-daemon.sh start alert-server
sh /opt/apps/dolphinscheduler-1.3.4/bin/dolphinscheduler-daemon.sh stop alert-server
```